study reports (18 studies), 1 SAS® database pooling data from 16 studies and 1 SAS® database composed of 1 study. While pooling data from these different sources, several issues had to be faced: 1) the need to harmonize data between studies; 2) the fact that some variables were not collected in some studies, and 3) the fact that for 6 studies, part of the data were available only as summarized data. After taking into account all these issues, an exploitable database was obtained whose strengths are its large sample size (35 studies comprising 7923 patients), its range of study settings and designs (phase I to IV across numerous countries) and the time period encompassed (1990 to 2007). **CONCLUSIONS:** Pooling data from various sources raised several problems, not all of them resolvable. However, this work allowed to obtain an exploitable database with undisputable strengths i.e. sample size, large range of study settings and design and time period encompassed. Once constituted, this database became a valuable tool in evaluating the safety profile of the virosomal aluminium-free hepatitis A vaccine, and will constitute a valuable database to answer further safety questions in the future.

PIN111

DYNAMIC MODELING OF COST-EFFECTIVENESS OF 13-VALENT PNEUMOCOCCAL CONJUGATE VACCINATION AGAINST STREPTOCOCCUS PNEUMONIAE IN TAIWAN

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OBJECTIVES: Many pharmacoeconomic studies have applied the decision analytic model or Markov model (collectively termed as static models) to evaluate the cost-effectiveness of pneumococcal conjugate vaccines without taking herd effect into account. The objective of the study is to carry out a cost-effectiveness analysis of 13-valent pneumococcal conjugate vaccine PCV13 in Taiwan using a transmission dynamic model (TDM) to circumvent static models. **METHODS:** We develop an age-structured TDM populated with parameters from the Taiwanese National Health Insurance Research Database (NHIRD), Centers for Disease Control, government websites and public available sources to evaluate the clinical and economic impact of PCV13. Pneumococcal diseases included in the TDM are invasive pneumococcal diseases (IPD), hospitalized pneumonia and acute otitis media (AOM). One-way deterministic and multivariate probabilistic sensitivity analyses based on 5000 Monte Carlo simulations are performed to explore model uncertainties. Confidence intervals for ICER and cost-effectiveness acceptability curves (CEAC) are calculated for further inferences. **RESULTS:** In the base-case analysis, 4-dose scheduled universal infant PCV13 vaccination is expected to prevent 5,112 cases of IPD, 535,607 cases of all-cause hospitalized pneumonia, 726,986 cases of AOM, and 420 deaths over a 10-year time horizon. The vaccination program is estimated to yield an incremental cost-effectiveness ratio (ICER) of US$38,045 and US$18,299 from payer and societal perspectives. One-way sensitivity analyses indicated that ICER is most sensitive to vaccine price and recovery rate of pneumonia. Ninety-five percent confidence interval of ICER is US$10,186 to US$34,563 by multivariate probabilistic sensitivity analyses in societal perspective. **CONCLUSIONS:** With a WHO-recommended cost-effectiveness threshold of 3 times the gross domestic product per capita, PCV13 vaccination program would be cost-effective in Taiwan. With the lack of long-term real data, TDM can be informative to decision makers on evaluating the long term cost-effectiveness of national immunization program.

PIN112

USE OF DYNAMIC MODELS TO MEASURE HEALTH OUTCOMES OF PNEUMOCOCCAL VACCINATION IN SPANISH ADULT POPULATION

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OBJECTIVES: Pneumococcal vaccination programmes change the natural course of infection as the number of susceptible subjects decrease along time. Markovian and Discrete Event Simulation models enable to capture the whole vaccination effect as infection rate remains constant. A differential equation dynamic model based on Anderson and May work was developed to describe how pneumococcal vaccination modifies the extension of the disease in the susceptible population. **METHODS:** Measure of epidemiological effectiveness was the number of contagions avoided by the preventive intervention. No assumptions on mortality and life-years-gained were considered. The nonlinear ordinary differential equations system proposed was $dS(t)/dt = -\beta^*I(t)^*S(t)+\gamma^*I(t)-V(t)$ $dI(t)/dt = +\beta^*I(t)^*S(t)-\gamma^*I(t)$ where: t = moment in time (months); I(t) and S(t) = number of infective and susceptible subjects at each time t; β = transmission coefficient; γ = natural withdrawal coefficient. The first order derivatives with respect to t, $dI(t)/dt$ and $dS(t)/dt$, indicate the instantaneous variation rates in time of infective and susceptible, while V(t) indicates the number of vaccinated individuals at each time. Study time horizon was five years. Spanish 65-years-old cohort annually vaccinated was 318,000 subjects. The parameters to populate the model came from Spanish Ministry of Health database (CMBD) and published data. **RESULTS:** Over a 5-year period, the number of avoided contagions derived from the implementation of the vaccination strategy would be 83,844 with a clear cumulative profile (1,922 on the 1st year; 7,874 on the 2nd; 15,748 on the 3rd; 24,683 on the 4th and 33,617 on the 5th). **CONCLUSIONS:** Dynamic models should be used to assess the impact of vaccination programs for infectious diseases where the infection strength varies along time. The goodness of fit of this pneumococcal dynamic model was high and captured health outcomes more easily than alternative modelling methodologies.

PIN113

A NEW FRAMEWORK FOR UNDERSTANDING THE IMPACT OF HEPATITIS C AND ITS TREATMENT ON QUALITY OF LIFE

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OBJECTIVES: To develop a conceptual framework demonstrating the impact of Hepatitis C (HCV) and treatment on health-related quality of life (HRQL). **METHODS:** 1) PUBMED literature were reviewed. HRQL issues raised by HCV patients in qualitative studies were compared with those emphasized in quantitative studies. Numerous issues important to patients were not adequately covered by commonly used HRQL instruments; 2) An in-depth interview guide was developed to investigate the issues raised in both study types. HCV patients from France (n=20), Brazil (n=20) and Australia (n=20) were sampled; and 3) interview data were examined for recurring issues, which were grouped by concept and theme. Commonalities and variation within emerging concepts and themes were explored, iteratively re-examined and refined. **RESULTS:** The process of analysis facilitated construction of an HCV-specific HRQL conceptual framework, within which new and previously identified issues, concepts and themes were organised into Physical, Mental and Social domains. This framework was compared against HRQL measures commonly used in HCV research, including the SF-36 and Hepatitis Quality of Life Questionnaire (HQLQ). HCV-related issues absent or not adequately represented by these instruments include: (Physical) HIV/HCV co-infection issues, impact of treatment side effects, mobility change, bodily changes, sexual dysfunction, and fatigue variability; (Mental) illness uncertainty and unpredictability, treatment fears, treatment management and adherence, addiction, identity change, emotional volatility, minor cognitive impairment, concerns for the future, positive disease impact, and coping; (Social) contagiousness and transmission-related issues, multidimensional nature of stigma, social isolation and withdrawal, loss of independence, and reduced participation modes. **CONCLUSIONS:** Numerous important issues raised by HCV patients are absent or inadequately represented by commonly used HRQL instruments. The proposed HCV HRQL conceptual framework encompasses these issues. This forms the foundations for the development of a new HCV-specific HRQL instrument. It can also assist health care providers to educate patients, plan individual interventions, and assess treatment impact.

Mental Health – Clinical Outcomes Studies

PMH1

ADJUNCTIVE PHARMACOTHERAPY AMONG INITIATORS OF SSRI TREATMENT FOR MAJOR DEPRESSIVE DISORDER: A COHORT STUDY USING A UK PRIMARY CARE DATABASE

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OBJECTIVES: For patients with major depressive disorder (MDD), adjunctive therapy is often a second treatment step following a partial response to an antidepressant. Although the role of adjunctive treatment is supported in practice guidelines, there is little information regarding the actual practice of adjunctive therapy, particularly for patients seen in primary care. The objectives of the study were to examine the incidence and predictors of adjunctive pharmacotherapy among patients with MDD treated with selective serotonin reuptake inhibitors (SSRIs) by primary care physicians (PCPs) in the UK (UK). **METHODS:** The General Practice Research Database was used to identify 15,274 patients with MDD who were prescribed first-line treatment with SSRIs from 2006-2008. Treatment trajectories were identified and classified as adjunctive therapy, drug switches, dose increases, discontinuation, and restart of therapy. Incidence and predictors of adjunctive therapy were assessed. Comparisons in healthcare resource utilization were made between patients receiving adjunctive therapy and patients receiving other treatment strategies. **RESULTS:** Overall incidence of adjunctive therapy was 3.07/100 person years (95% CI 2.90-3.25). Patients prescribed adjunctive therapy were more likely to be female (IRR 1.17, p=0.02), of higher age (IRRs 1.53-2.41, p<0.001), and had greater depression severity (IRR 1.02, p=0.004). Presence of postherpetic neuropathy (IRR 3.06, p=0.01), irritable bowel syndrome (IRR 1.33, p=0.01), and an increasing Charlson Comorbidity Index (IRR 1.08, p=0.03) were associated with a higher incidence of adjunctive therapy. MDD-related general practitioner consultations were lower among those prescribed adjunctive therapy compared with patients receiving other treatment interventions (IRRs 0.79-0.87, p<0.001). **CONCLUSIONS:** Incidence of adjunctive treatment was relatively low and was associated with several patient demographics, a higher burden of illness, and less PCP visits. The incidence of adjunctive therapy suggests that it is infrequently used in the management of MDD among patients who are partial responders to SSRI treatment in UK primary care.

PMH2

THE EFFICACY OF THE NEW ANTIDEPRESSANT AGOMELATINE AS COMPARED AGAINST PLACEBO AND SSRIS: A META-ANALYSIS COMBINING PUBLISHED AND UNPUBLISHED DATA

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OBJECTIVES: To asses the efficacy of agomelatine, a melatonin MT1/MT2 agonist and $5\text{-HT}_{2B}/5\text{-HT}_{2C}$ antagonist, when compared with placebo and SSRIs. **METHODS:** An extensive trials search was conducted on electronic databases, clin-